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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/485,443 | 05/01/2000 | WEI CHEN | Q57774 | 1926 |

7590 01/22/2004

SUGHRUE MION ZINN MACPEAK & SEAS
2100 PENNSYLVANIA AVENUE NW
WASHINGTON, DC 20037-3202

EXAMINER

KING, JUSTIN

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2111

DATE MAILED: 01/22/2004

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/485,443

Applicant(s)

CHEN ET AL.

Examiner

Justin I. King

Art Unit

2111

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of the “IEEE Standard for a High Performance Serial Bus”, Gorin et al. (U.S. Patent No. 5,020,059), and Douceur et al. (U.S. Patent No. 6,247,061).

Referring to claim 1: The IEEE standard discloses that it is known to group the nodes with the same speed capacity adjacent to one another because the higher speed device's speed will be capped by the lower speed parent device, and to reduce the number of hops (section 8.4.6.2). The implementation of reducing number of hops for optimizing 1394 efficiency is beyond the IEEE standard's scope; however, Gorin teaches that one of known implementation is to minimize the tree depth (column 6, lines 31-33) between the root and leaves; thus, it implicitly teaches that it is known to place the nodes with higher number of ports at the top of the tree.

Art Unit: 2111

Douceur teaches that bandwidth reservation is known to guarantee resource (column 2, paragraphs 2-4). Since the isochronous transmission is a part of the 1394 features, the bandwidth reservation is a must practice; thus, the nodes at the top of the 1394 tree will need higher bandwidth to support the isochronous transmission and to prevent speed capping. Hence, it would have been obvious to one having ordinary skill in the computer art to combine Gorin and Douceur's teachings to implement the 1394's optimizing principles because they enables one to minimize the number of hops and to support the 1394 isochronous transmission.

Referring to claim 2: Claim 1's arguments apply; furthermore, since the 1394 node's speed will be capped by the parent node, the priority is assigned to the higher speed node to support the full performance of the child nodes and the isochronous transmission.

Referring to claims 3-4: The IEEE standard discloses that it is known to group the nodes with the same speed capacity adjacent to one another because the higher speed device's speed will be capped by the lower speed parent device, and to reduce the number of hops (section 8.4.6.2). The implementation of reducing number of hops for optimizing 1394 efficiency is beyond the IEEE standard's scope; however, Gorin teaches that one of known implementation is to minimize the tree depth (column 6, lines 31-33) between the root and leaves; thus, it implicitly teaches that it is known to place the nodes with higher number of ports at the top of the tree.

Douceur teaches that bandwidth reservation is known to guarantee resource (column 2, paragraphs 2-4). Since the isochronous transmission is a part of the 1394 features, the bandwidth reservation is a must practice; thus, the nodes at the top of the 1394 tree will need higher bandwidth to support the isochronous transmission and to prevent speed capping.

Furthermore, since it is known to one in the computer art that any given node in a serial bus within the tree topology, except the beginning node and the ending node, must have at least 2

Art Unit: 2111

ports for connecting to its parent node and child node (as illustrated in specification's figure 1); such that, It is obvious to one in the computer art that a serial bus with N number of nodes will need to have at least $2N$ ports minus one port from each of the beginning node and the ending node, which concludes the total number of $2N-2$ ports, which equals to $2(N-1)$ ports.

Hence, it would have been obvious to one having ordinary skill in the computer art to combine Gorin and Douceur's teachings to implement the 1394's optimizing principles because they enables one to minimize the number of hops and to support the 1394 isochronous transmission.

Referring to claim 5: Claim 3's argument apply; furthermore, since the 1394 node's speed will be capped by the parent node, the priority is assigned to the higher speed node to support the full performance of the child nodes and the isochronous transmission.

Response to Arguments

4. In response to Applicant's argument that the prior arts do not teach the feature of connecting a non-used port of the node of the highest priority with the port of the node of the next priority (Remark, page 7, paragraph 1): The prior art teaches that it is known the higher speed node's speed will be capped to its parent node's speed. Thus, it implicitly teaches placing the higher speed as the parent node. The prior art also teaches that it is known to reduce the number of hop by minimizing the tree's depth. Thus, prior art implicitly teaches placing the nodes with more ports at the top of the tree. Therefore, the prior arts teach the feature of connecting a non-used port of the node of the highest priority with the port of the node of the next priority.

Art Unit: 2111

5. In response to Applicant's argument that Douceur's teaching with respect to bandwidth reservation does not suggest or in combination with others that nodes of higher speed nodes have higher priority (Remark, page 7, paragraph 2): The prior art teaches that it is known the higher speed node's speed will be capped to its parent node's speed. Thus, it implicitly teaches placing the higher speed as the parent node or the top of the tree. Therefore, the prior art does teach that nodes of higher speed nodes have higher priority.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

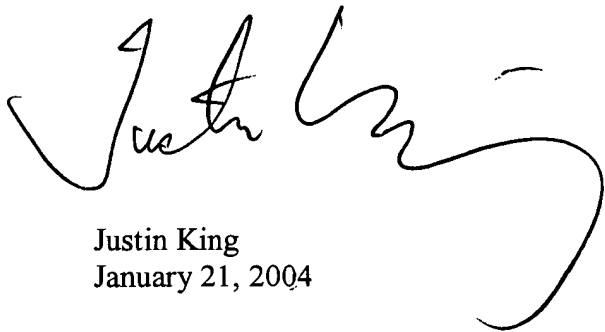
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin King whose telephone number is (703) 305-4571. The examiner can normally be reached on Monday through Friday from 9:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephones are unsuccessfully, the examiner's supervisor, Mark Reinhart can be reached at (703) 308-3110.

Art Unit: 2111

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose number is (703)-306-5631.

A large, stylized handwritten signature in black ink, appearing to read "Justin King".

Justin King
January 21, 2004

A handwritten signature in black ink, appearing to read "Gopal C. Ray".

GOPAL C. RAY
PRIMARY EXAMINER
GROUP 2000